



(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
27.11.2002 Bulletin 2002/48

(51) Int Cl.7: G01R 33/34

(43) Date of publication A2:
13.12.2000 Bulletin 2000/50

(21) Application number: 00304183.7

(22) Date of filing: 17.05.2000

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

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(30) Priority: 17.05.1999 US 313339

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(54) RF Body Coil for an open MRI system

(57) The present invention comprises a whole body RF coil system for use with an open magnetic resonance (MR) imaging system. The RF coil system comprises first and second quadrature RF coil sets (38) positioned on opposing sides of an imaging volume. Each RF coil set comprises similarly-structured, multiple RF coils. Each quadrature RF coil comprises a first and second plurality of primary path conductor segments (82,94), and first and second return path conductors (104,106), symmetrically disposed about a centerline at specified distances. The first and second plurality of primary path conductor segments are positioned in a first plane (84)

that is substantially spaced apart (Z_2) from a second plane (114), farther from the imaging volume, containing the first and second return path conductors. The conductors within each of the first and second set of primary path conductor segments are adapted to have a predetermined current amplitude ratio. Upon energization of the first and second RF coil sets in quadrature to generate a circular, polarized B_1 field, the positioning of the conductors and the predetermined current amplitude ratio provide a desired homogeneity within the imaging volume and a desired sensitivity drop-off outside of the imaging volume.

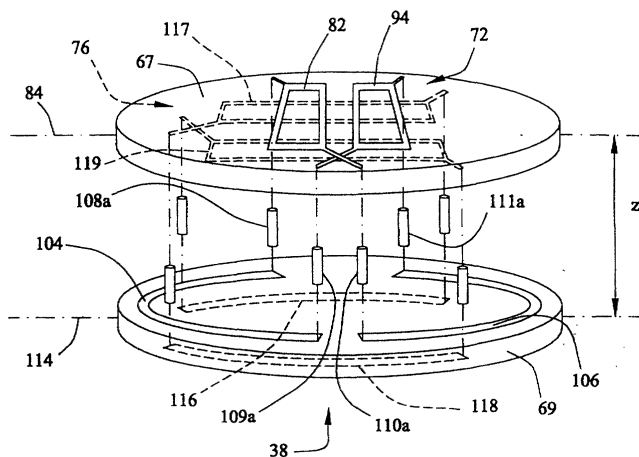


FIG. 5



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EUROPEAN SEARCH REPORT

Application Number
EP 00 30 4183

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Y	US 4 592 363 A (KRAUSE NORBERT) 3 June 1986 (1986-06-03) * column 5, line 20 - line 54; figures 3,5 *	12	
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The present search report has been drawn up for all claims			
Place of search MUNICH		Date of completion of the search 25 September 2002	Examiner Skalla, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)



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EUROPEAN SEARCH REPORT

Application Number
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CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 30 4183

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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